

REMARKS

Claims 1-8 and 23, 24 and 28 are pending in the case, and the Applicants respectfully request reconsideration of the amended claims pursuant to this Request for Continued Examination. Further, Claims 9-22, 25-27 and 29-32 were previously removed under a restriction requirement but are now believed to include allowable linking claims and these are now reentered in the case.

In the Office Action of November 5, 2003, the Examiner rejected Claims 1-5, 7 and 28 under 35 U.S.C. 102 as anticipated by Vaez-Iravani (USPN 6,208,411 or the '411 patent). Claim 1 and linking Claims 23 and 28 have been amended to clarify that the diffracted laser beams pass through a central region of an input aperture, or input plane, of a focusing lens with the input plane having an optical axis and with the input plane centered on the optical axis; and each axis of each of the diffracted laser beams coincides with the optical axis of the input plane, thereby enabling formation of diffraction limited focal spots. This is a very important distinction over the '411 teachings because unless the laser beams form diffraction limited focal spots, the proper optical gradient does not exist to enable each of the beams to form the desired focal spot. In the '411 patent such a diffraction limited focus cannot be achieved due to aberrations remaining uncorrected. In the '411 patent any beam which enters the input plane of the focusing element off axis will be degraded by a combination of comatic and spherical aberrations and thus cannot be brought to a diffraction-limited focus, thereby preventing adequate microscope operation. The '411 patent teaches that virtually all the beams entering the input plane of the focusing element 105 are off axis (see '411 FIG. 1) and thus cannot achieve the desired diffraction limited focus necessary to form diffraction limited focal spots. Clearly the '411 patent does not recognize this deficiency by employing numerous off axis beams for its inspection and imaging system. Vaez-Iravani therefore did not recognize the deficiencies in his methodology, but the instant claims as amended are directed to a system which overcomes these problems. Consequently, Claims 1-8 and 10-32 embody the above-recited patentable feature. Moreover, linking Claims 1, 23 and 28 are all now allowable over the '411 patent such that restricted Claims 9-22, 25-27 and 29-32 are now back in the case, being in condition for allowance.

The Examiner also rejected Claims 6 and 8 as unpatentable under 35 U.S.C. 103 in view of Vaez-Iravani and Horikawa (USPN 5,331,456). However, in view of the patentability of amended Claim 1, both Claims 6 and 8 are also now patentable.

The Examiner also rejected Claims 23 and 24 under 35 U.S.C. 103 as unpatentable under Vaez-Iravani. In view of the amendment to linking Claim 23 in a manner similar to the amendment to Claim 1, claims 23 and 24 are believed to be patentable over Vaez-Iravani. In addition as noted hereinbefore, Claim 28 has been amended in a manner similar to Claims 1 and 23 and is now allowable. Consequently, linking Claim 28 is in condition for allowance enabling inclusion of restricted Claims 29-32 depending on Claim 28.

It should also be noted that Claim 15 includes the additional patentable feature of computer software executable to establish virtual alignment of the plurality of laser beams at detector positions. Claim 16 also includes the feature of a phase shifting pattern for the virtual alignment. Further, Claim 17 includes a uniformly reflective surface being imaged using the software and a computer to calculate a hologram to project light spots. In addition, Claim 18 includes an addressable spatial light modulator enabling dynamic sample volume examination. Claim 20 employs software to reject sensed light signals arising from a zone of confusion. Claim 21 uses software to select at least one of the laser beams to increase its intensity and use that beam as an optical tweezer. In addition, see similar Claims 25-27. In view of these additional distinctions, Claims 15-21 and 25-27 are also patentable over the prior art of record.

The Applicants have also recently become aware of a new reference, USPN 6,043,932 (Kusunose) identified in a PCT search done in Europe and reported to the Applicants in the International Preliminary Examination Report received November 25, 2003. The '932 patent is directed to a laser microscope and pattern inspection device. However, the '932 patent is directed to scanning a one-dimensional line or a two-dimensional area in a raster-like fashion for surfaces of a semiconductor wafer (see col. 7, last paragraph and col. 7, lines 41-47). The '932 patent therefore does not recognize the importance of forming a three-dimensional, diffraction-limited spot array for inspection of volumes of a sample. Likewise Vaez-Iravani '411 is directed solely to a one- or two-dimensional inspection system for surfaces of semiconductor wafers (see '411 at col. 4, lines 46-50), not recognizing the need or importance

of a three-dimensional volume inspection system and the attendant necessary combination of optical components. Consequently, the claims of the pending case are patentable over the '932 patent as well as the '411 patent.

In view of the amendments and explanations, it is believed Claims 1-8 and 10-32 are now in condition for allowance.

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